

ABSTRACT

The present invention provides a cooling apparatus which is easy to build and to fix it to electronic devices, superior in thermal conduction and heat dissipation, and possible to make thin the total configuration of the apparatus. The liquid cooling unit 9 and the air cooling unit 12 are formed in a unit. A heat absorption surface 19 of the liquid cooling unit 9 is contacted or bonded to the heat generation component such as the CPU and the heat generator, which have the largest power consumption and also locally generate heat within a small area in the box 2. In the liquid cooling unit 9, a liquid cooling pump 14 composed of an electromagnetic pump is arranged for circulating the coolant in the flow path 10. The heat generated by the heat generation components such as CPU 6, heat generator 7, and the like is thermally diffused with heat conduction into the whole liquid cooling unit 9 by circulating the coolant with the liquid cooling pump 14.